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ON THE SEEDS OF TWO SPECIES OF STRYCHNOS.

By J. M. Maisch.

(Read at the Pharmaceutical Meeting of the Philadelphia College of Pharmacy, May 16.)

Last fall, I was informed that a vessel, which had arrived at the port of New York from the East Indies, had brought, as ballast, a quantity of seeds of a species of Strychnos. To the kindness of Dr. Fr. Hoffmann I owe a small sample of the same, and subsequently, Messrs. McKesson & Robbins very kindly went to the trouble of hunting up for me a few pounds of the same seeds, which, under the name of *Indian gum-nuts*, were offered for sale in New York, without finding a purchaser. I felt interested to ascertain whether, like the seeds of some other strychneæ, they contain strychnia. I exhibited the seeds at the pharmaceutical meeting in February, and showed, at the same time, from my cabinet, some seeds of Strychnos Tieute, *Leschinault*. This plant grows in the mountainous districts of Java, and its juice is used by the Malays to prepare the poison called upas radja or upas tieuté tjettek. The tieute seeds are orbicular or somewhat oblong, disc-like, resembling in shape nux vomica, five-eighths to three-quarters of an inch in diameter, yellowish grey in color, and covered with soft, appressed hairs, having a silky lustre; the disc is rather sharp-edged, with a slightly-projecting point, indicating the hilum, and covering the somewhat club-shaped radicle of the embryo. As in nux vomica, the white horny albumen has the shape of the seed, and is composed of two discs united near the circumference, thus enclosing a hollow space, into which the cotyledons project, occupying one-quarter to one-third the diameter of the cav-

ity. The cotyledons are broadly oval, scarcely cordate, rather acute, three to five-nerved.

Spach * describes the tieute seeds as follows: Elliptic, oval or suborbicular, velvety, brownish, (brunâtre,) lenticular or plano-convex; embryo projecting from the hilum, marginal, about one-third shorter than the perisperm; cotyledons heart-shaped, acuminate, nerved, foliaceous; radicle club-shaped, as long as the cotyledons. The description corresponds closely with the tieute seeds in my possession, the color excepted.

The so-called Indian gum-nuts are subglobose, of an appearance as if composed of two unequally-convex halves, with an elevated line surrounding the largest circumference; they are of a dirty, somewhat brownish grey color, with very short, closely appressed hairs; the largest diameter is three-eighths to one-half inch. A rather thin, but hard, integument covers a horny albumen which encloses, as in nux vomica, an orbicular cavity, into which the embryo reaches to about one-third the diameter. The radicle is marginal, short, cylindrical; the cotyledons are broadly oval, somewhat acuminate, and about three-nerved. Notwithstanding the horny texture of the albumen, the seeds are readily broken in an iron mortar, but are difficult to powder; their taste is insipid, not bitter.

When the seeds are boiled with dilute muriatic acid, they become very soft, so that they are readily mashed between the fingers; the acid decoction, which is not precipitated by iódohydrargyrate of potassium, was treated with an excess of lime, the precipitate washed with cold water, dried, exhausted with boiling alcohol, and the clear filtrate evaporated; a yellowish mass was left without the slightest tendency to crystallize. It had an insipid taste, and did not show the color reactions of either brucia or strychnia; concentrated sulphuric acid decomposed it rapidly. The seeds, therefore, contain no alkaloid.

In the East Indies, the seeds of Strychnos potatorum, *Lin. fil.*, are used for clearing muddy water, under the name of tettan-kotta, or clearing-nut. Spach† describes them as greyish, suborbicular, about five lines in size. Dr. Waring‡ says they are of a flattened, spherical

* Histoire Naturelle des Vegetaux. Phanérogames viii, 485. Paris, 1839.
† Loc. cit.
‡ Pharmacopœia of India, p. 146. London, 1868.

form and yellowish grey color, having the testa covered with short, close hairs; albumen horny and tasteless. As far as they go, these descriptions agree with the Indian gum-nuts, which I believe to be derived from Strychnos potatorum, *Lin. fil.*

According to the Pharmacopœia of India, these seeds are also used in native practice as an emetic, (Ainslie,) as a remedy in diabetes, (Kirkpatrick,) gonorrhœa, (Taleef Shereef,) &c. On what principle the clearing action depends is a matter of speculation. Dr. O'Shaughnessy, at one time, thought it was due to an astringent principle, while Pereira * supposed it depending on the presence of albumen and casein, and Guibourt attributes it to mucilage or pectin. The seeds are free from tannin, contain but little albumen, while, in the few experiments instituted by me, I could not ascertain the presence of casein or pectin. A considerable proportion of a peculiar mucilage is present, which does not yield a very ropy solution, and is not precipitated by alcohol, acetate of lead or sesquichloride of iron. If vegetable matter is suspended in water, the turbid liquid put into two glass vessels, and solution of this mucilage added to one, the latter liquid will settle the suspended matter in a short time, while the other remains turbid much longer.

The testa appears to offer obstructions to the absorption of water by the albumen; for, if the testa be unbroken, the seeds may be immersed in cold water for twenty-four hours, and still retain their hardness; but, if the testa is partly removed, or the seeds are broken, the albumen, after twelve hours immersion in cold water, becomes soft enough to be readily split by the finger-nail.

SYRUPUS CALCIS LACTO-PHOSPHATIS.

By William Neergaard.

In the *Archives Generales de Médecine* for December, 1869, and for January and February, 1870, Dr. L. Dusart recommends the use of a new preparation, which he terms the lacto-phosphate of lime, in which the lime salt is dissolved in free lactic acid.

Dr. B. W. McCready, of our city, requested me to prepare a syrup containing that compound, and I adopted the following formula:

* Pharm. Jour. & Trans., ix, 478. 1850.

Concentrated Lactic Acid,	fl℥i,
Magma of freshly precipitated Phosphate of Lime,	q. s.,
Aquæ Fl. Aurant.,	fl℥iss,
Aquæ puræ,	q. s. ad fl℥viij,
Sacchari Albi,	℥xj.

Mix the lactic acid with 2 fluidounces of water, and saturate it with the magma. Put the liquid upon a filter, and add the rest of the water until 8 fluidounces of filtrate are obtained. Pour this upon the sugar, contained in a bottle; shake occasionally until solution is effected, and strain. No heat ought to be applied, else the syrup assumes a milky appearance.

The syrup thus prepared contains between 2 and 3 grains of dry phosphate of lime in each fl℥, besides the lactic acid.

Broadway, 1183, *New York*.

ELIXIR CINCHONÆ ET FERRI CHLORIDI.

By W. W. Seay.

I send you my formula for this preparation, which I have used for years, and found it very satisfactory in its results. It requires very great care in the details, but, properly prepared, will keep without blackening for an indefinite length of time. I have a sample on hand which has kept bright and clear for nearly six years. Each pint contains one troyounce of red bark, a little over one troyounce of aromatics, and the equivalent of one fluid-drachm of tinct. ferri chloridi (U. S. P.) The iron used is of course protochloride.

Elixir Cinchonæ.

℞.	Cinch. Rub. Pulv.,	℥xvj	Troy weights are indicated, unless otherwise expressed.
	Fresh Orange Peel, bruised,	℥x	
	or recently dried,	℥v	
	Sem. Angelicæ,		in fine powder.
	Cinnamom. (Ceylon),		
	Sem. Coriandri,	*aa* ℥v	
	" Carui,		
	" Anisi,	*aa* ℥i *et* ʒvj	

M. Moisten with dilute alcohol, pack carefully in a funnel-shaped percolator, using a sufficient quantity of tow (free from tar) in the neck, to act as a filter. Pour on dil. alcohol until it percolates *nearly*

to the tow, and the surface of the powders is covered. Cork the percolator mouth, and allow to macerate for forty-eight hours. Now remove the cork and pour on dil. alcohol, and as fast as the tincture comes off, dissolve in each pint one pound avoirdupois of powdered sugar, until (Oxvj) sixteen pints are obtained of the elixir, and mix.

Sol. Ferri Chloridi (*Proto-*) (*FeCl*).

℞. Sulphatis Ferr. (FeO, SO_3, 7HO) av. oz. iv,
Sacch. Alb., av. oz. vj,
Aq. Bull. Oj.

Solve and filter whilst hot as rapidly as possible.

℞. Sodæ Carb. Puræ Cryst. av. oz. v, *vel* q. s.
Aq. Bull., fʒviij.

Solve, and filter while hot.

Mix the two solutions, pour the precipitated proto-carbonate of iron upon a calico filter, and wash thoroughly with boiling water, with an ounce of syr. simpl. to the pint, until the precipitate is free of soda. Dissolve the oxide in *pure* hydrochloric acid, being careful not to use an excess. Then add syr. simplex to make the solution measure twenty-two (fʒxxij) fluidounces.

Now take Elixir Cinchonæ, Cong. j,
Ac. Hydrochloric. Pur., ʒj, (troy weight),
Alcohol., fʒiv.

M. by agitation, and then add
Sol. Ferri (Proto) Chloridi, fʒij.

M. Dose for adult ʒij to ʒiv, in water.

It has been my experience, when the chloride of iron is made *directly* from iron and muriatic acid, notwithstanding I used every precaution in selecting material and mode of preparation, it has blackened the elixir, either at once or in a short time afterwards. I have made the protochloride by various processes: double decomposition between FeO, SO_3, 7HO, and BaCl, which makes a very beautiful solution under proper precautions, and keeps well. Where considerable quantities are to be made, the precipitation, washing and solution I perform in vessels exhausted of air and filled with hydrogen. The formula I sent you I used for years, until I have required larger lots, when I constructed an apparatus for the purpose. I have directed *boiling* water for the reason it is deprived of air, (and conse-

quently free from oxygen.) Care must be exercised in selection of the sulphate of iron used; those crystals having the least color are to be preferred, and those having the least trace of peroxide or persulphate in them to be rejected; by filtration of the solution the last remaining portions are got rid of. The carbonate, when thrown upon the filter, must be kept covered to the last moment with the hot water and syrup, otherwise it will rapidly oxidise. The whole operation must be performed as *carefully and rapidly as possible*, and when finished will be a beautiful and desirable preparation.

The more nearly the chloride approaches to a perfectly *pure proto*-chloride the better and longer it will keep. I have a sample of protochloride, made in hydrogen from sulph. of iron, in the form of a *heavy* syrup, composed of cane and grape sugars, which has kept perfectly for over one year, and I use it as circumstances call for it. It can be combined with any other tincture in the same manner as with cinchona. It has been decided by a number of physicians in my neighborhood that it requires a relative smaller dose of protochloride than sesquichloride of iron. Each tablespoonful (f℥ss) of this elixir contains the same amount of metallic iron as five (5) drops of the officinal tincture of the sesquichloride. I will also state that it is necessary to add the sugar to the tincture as fast as it percolates through.

The sugar contained in the elixir prevents the oxidation and precipitation of iron, and the free HCl mixed with the elixir probably converts a portion of the cane sugar into grape sugar, and also keeps in *solution* any small quantity of the iron, which may pass into a "*per-basic*" condition.

I would like to call attention to the fact, that if comp. tinct. cinch. U. S. P. is percolated in same manner, and sugar added, it will prevent the usual precipitation which occurs in it on standing.

New York, May 6, 1871.

GLYCEROLE OF LUPULIN.

By Emmet Kannal.

(From the Author's Inaugural Essay.)

Take of Lupulin one troy ounce.
Alcohol, six fluid ounces.
Glycerin, nine fluid ounces.
Curaçao cordial, one fluid ounce.

Mix the alcohol with two fluid ounces of glycerin, moisten the lupulin with the mixture, pack into a cylindrical percolator, and continue to add this mixture until eight fluid ounces of the percolate has passed; to this add the remainder of glycerin, previously mixed with the curaçao, and thoroughly mix the whole together. This will afford, by careful manipulation, a very fine preparation, miscible with any of the officinal syrups or tinctures, and possessing all the medicinal properties of lupulin. Dose, for an adult, one teaspoonful, representing 7½ grains of lupulin.

PHARMACEUTICAL NOTES.

Editor Amer. Jour. Pharmacy:

I send you a formula for Tinct. Cinchonæ Comp. which I find does not deposit any sediment.*

Red Peruvian Bark,	℥4,
Bitter Orange Peel,	℥3,
Serpentaria,	grs. 360, moderately fine powder,
Saffron, "Spanish,"	grs. 120, moderately coarse powder,

Dilute Alcohol, using 2 parts stronger alcohol to 1 of water, a sufficient quantity to obtain by percolation 2½ pints of tincture.

I dispense with the Red Saunders, as I find no reason for its employment, and obtain a very dark and handsome tincture with the above formula.

I also send a formula for the very popular antacid soda mint:

Sodæ Bicarb., . . .	℥i,
Spts. Ammon. Aromat., . .	℥i,
Aquæ Menth. Viridis, . . .	f℥ii.

M. Filter.

Dose: One to two tablespoonfuls for an adult; one-half to two teaspoonfuls for an infant.

I would like to see a better formula for soda mint, if any of the many readers of this journal will send it. Yours,

W. Ranstead Jones.

Mt. Airy, Phila., April 26, 1871.

* See also Amer. Jour. Ph., 1861, p. 196.

LIQUOR PLUMBI SUBACETATIS.

By Stewart Kellam, of Galveston, Texas.

(An Inaugural Essay.)

As it is of considerable interest to the Pharmaceutist to know the strength of the basic acetate of lead of the different Pharmacopœias, I have, in the laboratory of Dr. F. A. Genth, carefully prepared the different samples, and have examined them with reference to their specific gravity, and the amount of oxide of lead which they contain. The materials used for such preparations were first examined qualitatively. The acetate of lead was in thick, stout crystalline masses; the interior brilliant, and only the outside slightly coated with a more basic acetate; it was free from copper, and contained no other impurities.

The litharge, on the contrary, was of far less purity. I have examined six samples from different sources; they all contained carbonic acid, and minute traces of silver; two of them also metalic lead, and red oxide of lead; two were contaminated with oxides of iron and copper, with alumina and lime; and the other two showed, besides the impurities mentioned, silicic acid and teroxide of antimony. As it is so very easy to obtain the pure oxide of lead by the calcination of the pure carbonate, it is advisable to prepare always the pure oxide for pharmaceutical preparations. I have prepared my solutions of the subacetate, both with the purest of the examined samples of commercial litharge, and with chemically pure oxide of lead.

1. Prepared according to the Pharmacopœia Badensis.—190 parts of sugar of lead are digested with 222 parts of oxide. I have tried the process by digesting, in a close flask, 12 grms. of acetate of lead with 14 grms. of litharge and 60 c. c. of distilled water for two days. The mixture, after a short time, had assumed a thick, pasty consistence, from the formation of a large percentage of the so-called $\frac{1}{6}$ acetate, and yielded such a small proportion of liquid that further experiments were not made.

2. According to the Prussian Pharmacopœia.—3 parts of acetate of lead are digested in a close flask for one or two days, with 1 part of litharge and 10 parts of water, and filtering the product after cooling, which then should have a specific gravity of 1·236—1·240.

An experiment made with 18 grms. acetate of lead, 6 grms. of litharge and 60 c. c. of water (distilled) gave, after digestion and

filtration of the small quantity of undissolved basic acetate, a clear liquid, which, however, after several days, deposited a slight precipitate. The specific gravity was found to be 1·238, and 19·3255 grms. of the liquid gave, when precipitated with sulphuric acid, and after the expulsion of the liberated acetic acid by evaporation, 5·0258 grms. sulphate lead, equal to 19·14 per cent. of oxide of lead.

3. The Bavarian Pharmacopœia takes, for three parts of acetate of lead, one part of litharge and eight parts of water, and boils down the mixture till the liquid has acquired a specific gravity of 1·360. According to Wittstein (Chemisch-Pharmaceutische Praeparate) it is easier and better, and yielding the same result, to take only one half the quantity of water. My experiment was made according to Wittstein, and 18 grms. of acetate of lead, with 6 grms. of oxide of lead, were digested with 33 grms. of water, and, after filtration, gave a clear liquid of 1·376 specific gravity. 12·5856 grms. gave 4·8464 grms. sulphate of lead, equal to 28·34 per cent. of oxide of lead.

4. The Pharmacopœia Gallica uses the same proportions of acetate and oxide of lead as the Bavarian; hence I did not deem it necessary to repeat my experiments with these proportions.

5. The Pharmacopœia Brittanica prepares the liquor plumbi subacetatis by taking 5 oz. (avoird.) of acetate of lead, 3½ ounces of litharge, and one imperial pint of distilled water; boils for half an hour, constantly stirring the mixture; filters after cooling, and adds water to make the product 20 ounces. The specific gravity is 1·260.

In my experiment I have taken 20 grms. of acetate of lead, 14 grms. of litharge and 60 grms. of water, and added to the product the required quantity of water to produce 60 grms. of liquid. The specific gravity in my experiment was considerably higher, and found to be 1·353. 18 0218 grms. gave 6·5408 grms. sulphate lead, equal to 26·71 per cent. of oxide of lead.

6. Several experiments were made with the process recommended in the U. S. Pharmacopoeia, with commercial litharge as well as with chemically pure oxide of lead, and, for comparison with these, others by using the cold process recommended by M. Nerning (see Am. Journ. of Pharm., Sept., 1870, p. 467. Pharm. Journ., July 9th, 1870, from Journ. de Pharmacie et de Chimie.)

I. *Hot process.* The required specific gravity of the product is 1·267.

A. I boiled for half an hour, 16 grms. of acetate of lead with 9·5 grms. of litharge and 64 grms. of distilled water. The product was a clear liquid of 1·265 specific gravity. 9·5588 grms. gave 2.9403 grms. of sulphate of lead, or 22·64 per cent. of oxide of lead.

B. The same proportions of ingredients were used, but c. p. oxide of lead in the place of litharge. The specific gravity of the product was 1·234. 14·2815 grms. gave 3·7053 grms. of sulphate of lead, equal to 19·09 per cent. of oxide of lead.

C. A repetition of the last experiment with a sample of acetate of lead from another source, gave a liquid of 1·230 specific gravity, 11·4528 grms. of which gave 2·9068 grms. sulphate of lead, equal to 18·68 per cent. of oxide of lead.

II. *Cold process.* The same proportions of the requisite substances were allowed to remain, with frequent agitation, in contact for 24 hours, and in experiment *a.*, made with litharge, gave a liquid of 1·243 specific gravity, of which 19·3736 grms. gave 5·2476 grms. sulphate of lead, which is equal to 19·93 per cent. of oxide of lead.

B. repeated with c. p. oxide of lead, I obtained a liquid of 1·242 specific gravity, of which 15·2463 grms. gave 4·1196 grms. of sulphate of lead, or 19·88 per cent. of oxide of lead.

C. A third experiment, which was made with acetate of lead from another source, yielded a liquid of 1·220 specific gravity. 13·1400 grms. of the same gave 3·2300 grms. of sulphate of lead, which represents 18·09 per cent. of oxide of lead.

From these experiments it will be seen that the liquor plumbi subacetatis obtained by the different Pharmacopœias yield very different products, but also that the same process gave products of not exactly the same composition, and as always the same care has been used in each case, I cannot account for differences of nearly 2 per cent. in the amount of oxide of lead (as has been found between No. 6, II A. and C.,) otherwise than that the very low temperature at the time of the preparation of C. is the cause of this and other discrepancies.

As a general observation I will add, that the preparations made in the cold appear to keep better than those obtained by boiling, the latter more readily depositing basic salts.

ON BAPTISIA TINCTORIA.

By John A. Weaver.

(Extracted from the Author's Inaugural Essay.)

[After giving a short botanical description of the plant, the author describes the root and its medicinal properties, and refers to the examination of Mr. B. L. Smedley published in Vol. XXXIV of this Journal, 1862, page 311. We extract the following from Mr. Weaver's experiments:]

Experiment 1*st.* Fifty troy ounces of the root was boiled with successive portions of water acidulated with hydrochloric acid, until completely exhausted. The decoctions were mixed, strained, and while still hot, precipitated by a dilute milk of lime. The precipitate was copious, of a snuff-brown color and disagreeable odor. The mother-liquor was reddish brown, and refused to yield further precipitate by the addition of ammonia. The precipitate was thoroughly washed with water, and after being dried and powdered was digested in boiling alcohol and filtered. The alcohol recovered by distillation left a brown, viscid mass behind. This was treated with water acidulated with sulphuric acid, boiled a few minutes with animal charcoal and filtered. The result was a clear, colorless liquid. Upon the addition of ammonia to a small portion of this, a white precipitate was obtained.

This was the process followed by Mr. Smedley, and this the "white feathery precipitate" supposed by him to be the alkaloid. A portion was collected and dried, found to be insoluble in water, alcohol or chloroform. It was inodorous, had but little taste and possessed none of the properties of an alkaloid. Dissolved in water acidulated by hydrochloric acid, nearly neutralized with ammonia, and oxalate of ammonia added, a white precipitate was at once formed, showing the presence of *lime*. To ascertain to what extent it was composed of this, or whether it contained anything else, I added the whole of the first solution to an equal bulk of alcohol. The lime being insoluble in this, separated, and was collected on a filter; from the filtrate the alcohol was recovered, and the remaining liquid still gave a precipitate with ammonia. This was white, inodorous and tasteless. Ignited upon platinum foil, it did not volatilize, but swelled up and left a spongy charcoal behind, which, on being heated with a drop of nitric acid, became white.

These experiments were carefully performed, and each one repeated several times, always showing the same result. So I am prepared to say, that what was formerly regarded as the vegetable alkaloid of Baptisia tinctoria was, in reality, a salt of lime.

Experiment 4th. To a concentrated tincture of the root was added sufficient sulphuric acid to cause it to redden litmus, and the evaporation carried on until a small bulk was obtained. This was mixed with an equal bulk of water and filtered. The filtrate, on standing, separated into two layers, a heavy oily liquid and a lighter, more fluid one. To the lighter liquid was added a large quantity of water which threw out the remaining resin, and, upon filtration gave a clear solution not affected by more water. Upon testing a quantity of this with Mayer's test, a copious precipitate was obtained. To another portion chloroform was added, shaken together and allowed to separate. The alkaloid being in the form of sulphate, was supposed to be insoluble in that menstruum, while most of the remaining oil and coloring matter was removed. After removing the subsiding liquid I added, first, solution of potassa in excess, then chloroform, shook them together and again separated the chloroform, which, on spontaneous evaporation, left a small quantity of a light yellow substance behind. Upon testing the lighter portion of the solution with Mayer's test, a copious precipitate was still obtained, showing that more of the alkaloid still remained than was taken up by the chloroform. I therefore precipitated the whole of it by an excess of iodohydrargyrate of potassium. The precipitate was collected, suspended in water, and decomposed by hydrosulphuric acid, which threw down black sulphide of mercury, and left the alkaloid as an iodide in solution. This solution was concentrated, and carbonate of ammonia added in slight excess. It was then shaken with chloroform, which, on being separated and evaporated, left an amorphous mass behind. This was dissolved in water acidulated with hydrochloric acid, boiled for a few minutes with purified animal charcoal and filtered. Upon concentrating this to one third its bulk, long needle-like crystals were formed. The mother liquor, upon being further concentrated, yielded more crystals, and by evaporating to dryness left a yellowish crystalline mass. This I thought to be the alkaloid, but by igniting on platinum foil, a large residue was left. I then digested the whole of it in alcohol, filtered and evaporated. The residue was of a yellowish color, amorphous, disagreeable odor and extremely nauseous and acrid taste. But it had

an acid reaction, owing to free hydrochloric acid, of which, unfortunately, it had not been entirely deprived before dissolving in the alcohol.

Being unable, for want of time, to repeat these last experiments, I was obliged to let the matter rest unfinished. But I am satisfied that when the alkaloid is isolated, this will be the proper course to pursue. The portion remaining undissolved in the alcohol, I afterwards found to be lime. In the course of my manipulations I found much resin, and a large quantity of a heavy fixed oil.

These experiments were conducted in the laboratory connected with our College, where, having every facility and the best of advice, I was enabled to proceed with accuracy.

ON THE CULTURE OF HOPS IN THE UNITED STATES.

By Emmet Kannal.

(From the Author's Inaugural Essay.)

Hops are indigenous to Asia, but are found growing wild in Europe and were cultivated to a considerable extent in Germany, as far back as the ninth century; they were first introduced into England from Flanders, in the year 1510, during the reign of King Henry VIII. The young tender shoots of the hop vine, especially in the beer countries of Europe, are much esteemed as an article of food; they are taken up when they appear just above the ground, and are cooked and eaten like asparagus or greens, being generally served up as one of the delicacies of the spring season.

When first introduced into London, about the year 1524, the people were very much prejudiced against the use of hops, so much so, that they petitioned King Henry to prohibit their use, claiming that they would spoil the taste of drinks, and endanger the lives of the people; after some time the King granted their petition, and issued an injunction prohibiting the use of hops in the manufacture of ale and beer in that country.

Hops are also found growing wild in hedges and thickets in most parts of the United States, abounding in the valleys of the Missouri and Mississippi Rivers. Many varieties are cultivated very extensively in our Eastern and Western States, but the kinds known as English Cluster and Grape Hops, seem to be most generally culti-

vated in the Hop Gardens of New York and Wisconsin; they give the greatest yield and are considered the very best.

Another variety called Pompey Hops is not so well known; the vines are very large, having long branches on which the hops hang in clusters. They are more apt to be injured by rust and insects than the other two kinds mentioned; both are early varieties.

Within the last twenty-five years the cultivation of hops has spread from the sea coast to the Mississippi River; the soil selected is usually of considerable elevation. Ground that will yield good corn and potatoes is very suitable for hops; it must be dry, rich and exposed to plenty of sunshine, very stony ground being objectionable, both on account of the difficulty in setting poles for the vines to climb, as well as the inconvenience and hard labor required in preparing and attending the soil, which may be greatly enriched and increase the growth by placing old bones around the roots of the vines. Shelter from cold winds is very necessary to protect the vines; thick woods and barren valleys are not well adapted for the growth of hops, since rust, blight and insects are likely to injure them in such localities, while sunshine and protection from cold winds may be regarded sure preventives for the same.

The vines are trained to twine around poles with the sun, by tying them on with strings. In the state of New York. where they are very extensively cultivated, great care is taken. A piece of high and dry ground is there selected, and men attend to the setting out, training, trimming, picking and drying at the proper time. Hop vines are generally set out during the spring months, and bear a crop of hops the same year; the usual time for gathering comes about September 1st, before any frost has appeared, which very much deteriorates them. To determine when they have come to maturity, and are ready to pick, is designated by the condition of the strobiles and the general appearance of the seed, which should be of a dark brown color and hard; the scales then commence to loosen, and when at this stage the strobiles should be collected. They are then dried, which is best done by artificial heat, great care being requisite not to apply too much heat, which would drive off the volatile principle and render the hops very brittle and unfit for market, through the loss of their lupulin in packing.

The total product of hops in the United States in 1850, was little more than three millions pounds; while in 1860, it had increased to

nearly eleven millions pounds, and of this amount the state of New York produced nine millions pounds. In the year 1861, about eight millions pounds were exported.

Hops, when packed in bales, are sometimes adulterated, the outside consisting of good hops, while the interior is filled with hops deprived of the lupulin, and sprinkled over with lycopodium and powdered rosin to hide the fraud.

I have obtained from one pound of fair commercial hops, 1¼ oz lupulin; from a pound of fresh New York hops 1 oz, and from fresh Philadelphia hops ⅞ oz, averaging 1 oz from the pound, or 6¼ per cent. The smaller yield in the last two cases was due to the fresh condition of the hops.

THE ÆSTHETICS OF LABELS.

By James R. Mercein.

"A good workman is known by his chips," says the old adage; a careful pharmacist is known, or should be, by his labels, say I. Sent out as they are upon multiform parcels to the homes of our customers, they pass beyond our reach and speak for themselves—and for us. It behooves us, then, to be very circumspect as to the outward adorning of our dumb representatives. A roughly cut, badly printed label such as we too often see, is like a 'shocking bad hat,' on a well-dressed man, spoiling the *tout ensemble* and betraying the sloven. Pharmacists err in thinking their patrons inobservant of such seemingly small matters. The almost Egyptian mystery that surrounds the ordinary details of our profession baffles the looker-on, and he naturally judges us by our outward symbols and tokens, of which the label is the most familiar. *Ex pede Hercule*—if by the brazen foot the ancients estimated the statue, let us see to it, that the labels, our representatives, shall be a worthy exemplar of our work. The form of the label is the first point to be looked at. A round peg in a square hole does not look more out of place than an ill-shaped or over-sized label, and yet every day you will see a huge bit of paper on a 'wee little' bottle, or a diminutive scrap on a portly flagon, thereby neutralizing the good looks of both labels and vials. Of course there can be no definite rule as to proper sizes, but the pharmacist should train his eye and his taste intuitively to recognize the right proportions. Let him avoid exactly square labels, or those

abortive attempts which resemble monumental tablets. Double lines in the border, and rounded tops will give a label, printed in black ink especially, a tomb-stone look that must be suggestive to the patient. Hogarth insisted that the curve was the line of beauty, but if he had seen the shield-shaped labels now in such common use for 'Elixirs' and 'Syrups,' he would have retracted his assertion instanter. Tastes will differ of course, but to my eye these pharmaceutic escutcheons are fearfully and wonderfully ugly. In fact, almost every irregular form of label, unless its matter is nicely distributed and its type selected with the greatest care, is apt to be very ungraceful. For steady use, the old-fashioned oblong label, in width not quite half its length, wears best and looks best. For packages, the strip label, long and narrow is preferable. Well printed and tied on, so that its upper edge lies on the edge of the fold, it sets off a handsome bundle. I annex a form of strip label, used by me for some years, which has the merit of novelty at any rate.

Smith.	ROCHELLE SALTS.	50 Hudson St. Troy.

An octagon looks well on pill-boxes, and is a relief from the almost inevitable circle.

But it is in the printed matter, its distribution and its types where improvement is sadly needed. Why pharmacists in the progressive age should persist in using the stereotyped phrases in vogue thirty years ago, the same old-fashioned type, the venerable mortar, alembic and retort; why we should do these things because our fathers did so before us, is a mystery. The art of type-cutting presents us with so many varied forms of letters, that numberless combinations, novel yet elegant, can readily be made. The chief error with pharmacists is a tendency to over-crowd their labels with reading matter, one would think they were trying to advertise all their wares in this small space, and yet the truth is, beyond the publicity of name and address, the label is not an advertisement, but merely a voucher for the contents of the package. A few lines, terse and to the point, are far better than a crowded jumble of disjointed sentences. "A rivulet of text flowing through a meadow of margin," should be the rule, as

every printer will tell you. Useless verbiage and common place phrases should be avoided. "Fine drugs and chemicals constantly on hand," physicians' prescriptions carefully compounded, &c., &c.," should be treated with the respect due to old age—and laid aside If we are good pharmacists these antique puffs will be unnecessary; if we are poor ones, such stale bait will not lure customers.

The titles that pharmacists assume are, as a general thing, decidedly inappropriate, and needing amendment. There is no doubt that the words "pharmaceutist," or "pharmacist," are more nearly correct as expressing our professional status, although some contend that these should be peculiar to graduates. Be this as it may, the nomenclature of to-day is wrong. "Druggist" means no more or less than a seller of drugs, crude or otherwise, and implies no skill. It puts us on a level with any tradesman who simply sells to gain; the word should be confined to wholesale dealers only. Even when yoked with "chemist," as it often is, it will not pass muster. How many of us can lay the slightest claim to being chemists, farther than the ordinary requirements of every day business will warrant the title; and yet we coolly force ourselves into the ranks of a profession that requires the life-long attention of a Liebig, a Berzelius, a Doremus, or a Bridges! "Dispensing chemist" is equally absurd or even more so. Who for a moment, aided by the most vivid imagination, could picture the above mentioned analysts dispensing senna and manna or mixing a dose of oil! The term "apothecary," is so exclusively English and refers to such a different mode of doing business, half medical and half pharmaceutical, that it is totally inapplicable here. "Pharmacist" expresses exactly what we are; is not so clumsy as "pharmaceutist," looks well on a label, and, better than all, does not make us appear like the jack-daw of the fable, in borrowed plumes. In closing this homily, it seems almost superfluous to hint at such inelegancies as pasting one label over another, or over the seam of a bottle; of putting it on crooked, or with ragged edges; but I feel that most of my pill-rolling brethren will bear me out in the assertion that these slips are too often made. "What is worth doing at all, is worth doing well," says another old adage.

NOTE ON HYDROCYANATE OF MORPHIA.

By Prof. J. M. Maisch.

Among the descriptions of morphia salts, as furnished by various chemists, the hydrocyanate is not enumerated. In Gmelin's Chemistry some double hydrocyanates are mentioned, but not the simple morphia salt, and, as far as I know, nothing is known of its formation or its properties.

A prescription having been received, calling for one grain each of acetate of morphia and cyanide of potassium in a 3 oz. mixture, the separation of needles was observed before the medicine was handed out; they were removed by straining, and found to be a salt of morphia. Although granulated cyanide of potassium was used, it was still possible that this salt might have been impure, and the formation of the crystals due to some impurity.

Pure hydrocyanic acid was therefore neutralized with ammonia, and the aqueous liquid diluted so that it contained in each fluiddrachm one grain of pure cyanide of ammonium. This solution was experimented with like the solution of cyanide of potassium. The following contains the results of the experiments thus far obtained:

1. A neutral solution of a morphia salt, even if diluted to the proportion of 1:1500 (1 grain in $3\frac{1}{2}$ oz.), yields with a neutral cyanide a crystalline precipitate consisting of hydrocyanate of morphia.

2. After the crystals have separated, the filtrate, acidulated with nitric acid, yields no precipitate with iodohydrargyrate of potassium; the morphia hydrocyanate, therefore, if soluble at all, dissolves but very sparingly in water.

3. The solubility of the morphia hydrocyanate appears not to be increased by an excess of the precipitant.

4. The precipitate is readily dissolved if the liquid is slightly acidulated by a mineral acid; it is likewise soluble in acetic acid, and for this reason does not appear in a mixture containing syrup of squill.

5. Hydrocyanic acid does not precipitate a neutral solution of morphia.

It is obvious from the foregoing that morphia salts ought not to be prescribed simultaneously with neutral cyanides, except enough acid be added to retain the hydrocyanate of morphia in solution.

DETECTION OF TURMERIC IN POWDERED RHUBARB AND YELLOW MUSTARD.

By J. M. Maisch.

Rhubarb root which has been attacked by insects, or deteriorated in consequence of dampness and heat, is by some dealers sent to the mills and ground together with some sound rhubarb, or, if the color is not sufficiently bright, turmeric is added, and the powdered rhubarb finds its way afterwards into the hands of the unsuspicious as a prime article. The fraud may be detected in a few minutes in the following manner:

A small quantity of the suspected rhubarb is agitated for a minute or two with strong alcohol, and then filtered. Chrysophanic acid being sparingly soluble in this menstruum, the brown yellow color of the filtrate is due to the resinous principles of rhubarb mainly; if adulterated with turmeric, the tincture will be of a brighter yellow shade. A strong solution of borax produces in both tinctures a deep red brown color. If now pure muriatic acid be added in large excess, the tincture of pure rhubarb will instantly assume a light yellow color, while the tincture of the adulterated powder will change merely to a lighter shade of brown red. The test is a very delicate one, and is based on the liberation of boracic acid, which imparts to curcumin a color similar to that produced by alkalies, while all the soluble principles of rhubarb yield pale yellow solutions in acid liquids.

The same test, applied in the same manner, is also applicable to ground mustard seed. The seeds of *Sinapis alba* yield a powder of a yellow grey color, entirely distinct from the color of yellow mustard met with in the market. Agitated with alcohol and filtered, a turbid solution is obtained, which assumes a bright yellow on the addition of the borax solution, and becomes colorless or whitish again on being supersaturated with muriatic acid. If the mustard be colored with turmeric, the filtrate has a yellow tint, becomes brown red by borax, and retains the color on the addition of muriatic acid. All the so-called yellow mustard of our commerce which I have had occasion to examine, whether ground in England or in the United States, contains turmeric. This practice ought to be discountenanced; for, under the yellow color imparted by curcuma, adulteration of mustard may be carried on to an almost indefinite extent, if *strength* be supplied by the addition of a little capsicum.

REMARKS ON TWO OFFICINAL FLUID EXTRACTS.

By X. T. Bates, M. D.

There are some important additions which the Committee for the Revision of the Pharmacopœia should consider, and the surest way to bring them to their attention and also to that of the public is the insertion of this article in the *American Journal of Pharmacy.*

Ext. Sarsap. Fluid. Comp.

This article, as now prepared, should contain, as an alterative, conium as well as pipsissewa and dulcamara. I have always added to the U. S. P. fluid ext. before using it, for each pint, two fluidounces of fluid ext. conium, two fluidounces of fluid ext. dulcamara, and two fluidounces of fluid ext. of princess pine, with very decided increase in its alterative effects, and have also added for each fluidounce of the above 10 grains iodid. potassium, 4 grains pyrophosphate iron; so that in the ordinary dose of one to two teaspoonfuls the patient gets 2½ grs. of iodide of potassium and 1 grain of the iron salt, which is sufficient in this combination. As a general rule, preparations containing iron have too much, thus producing ill effects. No more should be taken than can be assimilated.

Ext. Buchu Fluidum.

This article at present is having a large sale, from the extensive advertising it receives, and the numerous and overstated purposes for which it is widely recommended. This article, as far as my experience with it goes, contains very little, if any, of the medical properties of the plant, and appears to be highly flavored with peppermint.

The Pharmacopœia does not provide for any compound preparation, nor have I met with any in the numerous publications on fluid extracts, except in the "Journal of Materia Medica," which proposes the following:

Take of	Buchu Leaves, . . .	16 troy oz.
	Uva Ursi, ...	4 "
	Cubebs, ...	4 "
	Juniper Berries, . . .	4 "

Cover with alcohol, 95 per cent., and macerate for a week; then exhaust with alcohol at 70°, and evaporate so as to measure twenty-eight (28) fluidounces.

I have tried this with great satisfaction, and have also modified it by substituting pareria brava for the cubebs in some cases.

I hope to make some suggestions concerning other articles which my experience has indicated as improvements in existing preparations.

Albany, May 13, 1871.

[We know little of the composition of the so-called fluid extracts of buchu, now largely advertised as proprietary medicines, but believe the author's remarks to be correct, that some, at least, contain scarcely any buchu. However, we desire to remind the author that fluid extract of buchu, prepared according to the U. S. Pharmacopœia, soon acquires a mint like odor.—Editor Amer. Jour. Ph.]

PEPSIN.

By G. A. Zwick.

So much has been said and written about this remedy, that the subject would seem nearly exhausted. I desire, therefore, only to communicate the result of a few experiments just completed; these, with the investigations of others, may perhaps lead to the adoption of a formula for a preparation of this article in the next edition of our Pharmacopœia.

1st. A fresh stomach of a pig was emptied, and the slimy mucous substance scraped off, spread upon a glass plate, and dried.

2d. The mucous membrane (scraped off as above) was dissected from the body of the stomach, cut up into moderately fine pieces. This weighed 8 oz.; it was digested with ℥viii pure glycerin (acidulated with ʒii muriatic acid) for twelve hours, expressed, and more glycerin added till ℥viii were again obtained. This fluid was set aside, and separated after a few days; the clear was poured off and filtered, warming it a little to facilitate filtration.

3d. Another pig's stomach was cleanly washed and wiped, macerated with water (acidulated with hydrochloric acid) for 12 hours, this water poured off and more added, washing and rubbing the membrane well. All these washings and the first infusion of 12 hours, making 24 oz., were filtered, precipitated with acetate of lead, and treated with sulphuretted hydrogen, being the process mentioned in the U. S. Dispensatory, but the liquid pepsin was evaporated to ℥viii only, not to dryness.

To compare these preparations they were tried with coagulated albumen.

No. 1. Six-tenths ($\frac{6}{10}$) of a grain of the dry mucus dissolved 12 grains albumen.

No. 2. One fluidrachm of the glycerin preparation dissolved 12 grains of albumen.

No. 3. Five fluidrachms (ʒv) of the watery solution dissolved 12 grains of albumen.

The above result, however, does not represent the utmost solving power, excepting of No. 1. Nos. 2 and 3 suffered losses of pepsin. No. 2 lost pepsin on account of being digested and warmed while still in contact with the mucous membrane, and I am sure considerable pepsin was lost, as the mass became quite soft and pulpy. The process should be carried on cold. No. 3 lost some of the precipitate during washing. This process is not practicable in warm weather, as the liquors decompose rapidly.

Summing up my experience, I should take No. 2 as the process furnishing the most permanent preparation, being agreeable both to the eye and the palate of the patient. It has a bright, clear straw color, an agreeable bland taste, and could be made double the above strength. It is not subject to the changes and other objections of the powders, is ready when it passes out of the hands of the apothecary, without further mixing, and not objectionable in taste to the most fastidious.

Covington, Ky., May 12, 1871.

MINERAL SPRINGS IN IDAHO AND THEIR CALCAREOUS DEPOSITS.

By A. R Roessler.

A large number of samples of water from these springs have been received at the Geological Museum of the U. S. General Land Office, through courtesy of Hon. Wm. H. Hooper of the House of Representatives. They are situated in the south-eastern part of the Territory, on the sources of Bear River which empties into the north part of Great Salt Lake, and contributes largely to the saline contents of that dead sea of America. The names by which the formations are designated indicate their character to some extent, being named re-

spectively the Soda, Warm, Big, Steamboat, Iron, Favorite, &c. The mineral contents are carbonate of soda, carbonate and sulphate of lime, a salt of magnesia, carbonate of iron, and other substances to be more correctly determined by chemical analysis. From one of them carbonic acid gas is perpetually boiling and bubbling up, hence its name of the Steamboat Springs. The high temperature of another implies its origin in subterranean reservoirs where heat is communicated to it from the adjacent rocks. This is not astonishing when a casual survey is made of the surface rocks of this region, which are to a considerable extent basalt and trachyte, and proving the whole tract of country to have been once occupied by volcanoes, now extinct.

The water as it flows away from the springs carries with it the soda, magnesia and other soluble salts to be finally deposited in Salt Lake, but much of the insoluble salts, as the carbonate and sulphate of lime and the oxide of iron, are deposited around the mouth of the spring, and, coating moss, leaves, twigs, and other objects, forms very fantastic mosses of calcareous tufa, which are seen lying around in every direction. Some very beautiful mosses of this curious incrustation have also been received by the Commissioner of the Land Office and deserve a visit from those who are curious in mineral productions. —*Journal of Applied Chemistry, February*, 1871.

TESTING COCHINEAL.

By J. M. Merrick, Jr., S. B.

I give in the following article the outlines of the method I am in the habit of using for testing samples of cochineal to ascertain their comparative coloring powers. I have not seen it described in print, and while it is a much closer and more accurate method than that which is based upon dyeing strips of mordanted woollen stuffs, it is preferable to the bleaching with chloride of lime method—as the oxidizing substance used, viz., potassic permanganate, does not precipitate the coloring matter of the cochineal.

I grind to a fine powder the samples to be tested, weigh out two or two and one-half grammes, and boil this amount in a capacious narrow-necked flask, with 750 c.c. of water, for one hour. The liquid is immediately filtered through dry paper filters, and tested when cold. To test it, 50 c.c. are measured in a flask of that capacity and poured

into another flask of about 200 c.c., and the measuring vessel rinsed with a definite quantity of water, say 10–15 c.c.

A weak solution of permanganate is then run in from a burette with a glass cock, the flask being shaken well after the addition of every 10 c.c.

So much permanganate solution is added that the cochineal extract shall be changed from its original color to a pink of the very faintest shade, almost yellow, in fact, but never reaching a full yellow. This pink shade should be persistent, that is, it should not turn yellow after standing fifteen minutes; and after a little practice it will be found very easy to obtain the tinge, which shows that the coloring matter is almost but not quite destroyed.

When a number of samples are to be compared I arrange an equal number of 200 c.c. flasks and test-tubes on the table, a tube standing in its rack in front of each flask. Then the *same* number of c.c. of the permanganate solution (which should be at least so weak that bulk for bulk of this and the cochineal solution will be required), is run into each flask, taking care to use too little to completely destroy the coloring matter in *all*. The flasks are well shaken and allowed to stand for ten minutes.

Part of the contents of each is then poured into the corresponding test-tube, and a glance at the tubes as they stand side by side will show which is the least affected by the bleaching liquid. This sample having been selected to serve as a standard, the contents of the test-tube are returned to this flask, and more permanganate solution is cautiously added, until a very faint pink tinge, which a fraction of a c.c. will turn to a full yellow, is obtained.

The number of c.c. used having been noted, a fresh trial is made, in which the c.c. required, minus one, are used, the flask agitated, and the last c.c. or part of it, as the whole may not be necessary, added. If the two results agree, the next sample is treated in the same way, and so on until all are tested.

I usually make a final trial by measuring the 50 c.c. of each solution into its flask, running in the permanganate in the ascertained amount into each as quickly as possible, letting the flask stand 10 minutes, and then making a comparison of all in the test-tubes.

If the shades are not exactly alike, a pretty good guess can generally be made of the fractions of c.c. required, which should be added, the contents of the tubes being joined to that in the flasks, and a second or third comparison thus made.

This is rather a long description of what in practice is a very simple and good process, the three principal points to be borne in mind being,

1st. To use a weak solution of permanganate.

2d. To have a very faint pink color as a standard of comparison.

3d. To let the liquids remain after agitation together 10–15 minutes before comparing them.

I may add, that it is very remarkable how little can be told of the value of a sample of cochineal by a mere physical examination, and that the frequent inconsistency between value and price is equally surpri-ing. I have known samples to differ *thirty* per cent. in coloring power, and only one or two cents per pound in price.

Laboratory, 59 Broad street, Boston.

—*Amer. Chem., April*, 1871.

SULPHO-CARBOLATES.

By T. H. Hustwick.

From communications to this and other journals on the preparation of some of the above salts, I have gathered that the formation of sulpho-carbolate of zinc is best accomplished by a process of decomposition or displacement. In a late number of this Journal (No. 39) is given a process for the preparation of this salt by decomposing sulpho-carbolate of lead by metallic zinc; doubtless the salt of zinc thus formed is of great purity, but is it not possible that a salt of equal purity may be obtained by direct combination, saving both time and trouble? My own experience leads me to suppose that it may. I have made considerable quantities of sulpho-carbolates, and the *modus operandi* followed by me has been, in its essentials, that recommended by Mr. C. H. Wood in this Journal (Vol. X. 2d ser. No. 7); this process, however, gives a salt more or less colored and less crystallized than when pure. Where one of the alkalies or alkaline earths is the base, nothing more is required than to evaporate the neutral solution so far as to produce a good crop of crystals; these are to be well drained and redissolved for a second crystallization. For the zinc salt I have saturated the diluted acid with the oxide, evaporating the solution till, when quite cold, a nearly solid mass of crystals is left in the bottom of the basin; this reddish-colored magma is well broken up and allowed to rest a short time, when the supernatant liquor may be

removed, the remainder placed in a calico cloth and strongly pressed, by which a further quantity of red mother-liquor is got rid of, leaving a cake of sulpho-carbolate nearly pure; this, when again dissolved, filtered and sufficiently evaporated, yields the salt in a state of purity far surpassing any other sample I have ever seen. As the expressed cake is so nearly pure, almost the whole of it may be recovered by further evaporation. This procedure applies equally to iron and copper. To obtain the copper-salt, the diluted acid is saturated with freshly-prepared moist carbonate of copper, producing a beautiful intensely green solution, which, no doubt will make an excellent color for druggists' show-bottles. The crystals, when large, are a brilliant blue, and form clusters of great beauty, but difficult to obtain as single crystals; when small, they are green, probably from containing less water of crystallization.

The iron salt was obtained by the action of the acid on fine iron wire; the color of the crude solution is a most intense violet, and, like that of copper, would doubtless make a good color for show-bottles. The expressed cake, though almost white, when dissolved, reproduces the characteristic violet in almost its original intensity; the crystals produced from this solution are violet-green, the green predominating; before their removal from the evaporating basin, they should be carefully washed with ice-cold water by means of a syringe, in order to free them from the colored mother-liquor which adheres with great pertinacity. A peculiarity of this salt is, that a freshly prepared solution is almost colorless, and without a trace of violet, but as it absorbs oxygen, peroxide of iron is precipitated, the violet tinge once more appears, and increases in intensity till it almost equals, in that respect, the crude solution.

These salts are all easily prepared, are very stable, and as they crystallize from pure solutions with great facility, and into regular geometric forms, they make capital show objects. Some crystals of the calcium salt that I now have are perfect rhombs. The way in which all these solutions, during the progress of crystallization, climb up and over the sides of the basin, by the force of capillary attraction, is rather astonishing, unequalled, as far as my observation goes, by any other compound; it is rather a nuisance, but may be completely prevented by slightly greasing the inside edge of the vessel. Into the chemical part of the question it is not my purpose to go, but the remarkable changes exhibited by some, at least, of the sulpho-carbo-

lates, under the action of high temperatures, shows there is room for further investigation. Exposed to the heat from a Bunsen's burner, the soda and potash salts exhibited all shades of color from pale pink to intense purple; and afterwards placed on the glowing embers of a bright fire, combustion takes place in a very similar manner to the old Pharoah's serpents, leaving an ash equally bulky and eccentric. —*Pharm. Jour. and Trans., April* 22, 1871, p. 845.

SOLUBILITY OF SULPHUR IN COAL TAR OIL.

By C. Widemann.

Eugene Pelouze, son of the celebrated chemist who died in 1867, observed that the oils obtained in distilling the tar produced by gas works, dissolve the largest amount of sulphur at a temperature approaching their boiling point. As soon as this temperature is lowered, the sulphur is precipitated in a crystallized form. This property can be used in industry for the extraction of the sulphur from the "solfatares," or sulphur ores coming from volcanoes, and especially in treating the matters used for the purification of common street gas. According to Lanning's process, coal tar oil having dissolved 43 grammes of sulphur at 130° Centigrade, and afterward cooled down to 15° Centigrade, produced 41 grammes of crystallized sulphur; then the same liquor heated and cooled alternately, dissolved and precipitated a new amount of sulphur.

In order to obtain the above results, only the heavy oil of the tar must be used, costing from 80c. to $1 per 100 lbs. The oil is retained after every operation and can be used over again. This process is a great advantage over the sulphide of carbon, not only as regards the price, but also because they can be operated at a temperature below their boiling point, which is very high, thus doing away with the losses of evaporation and the great danger resulting from the use of sulphide of carbon.

The mixtures used for purifying gas, which are lost after being in use a certain time, contain an average of 40 per cent. of sulphur, associated with saw-dust, oxide of iron, and tar products. The extraction of this sulphur could not heretofore be economically done by the processes known, but with the process we describe it can be done. The following is the mode of treatment:

The old purifying mixtures having been desiccated by exposure to

the air under sheds, are then placed in cast iron cylinders, heated externally by steam, and disposed in such a way that a pressure of air can be given at will, thus increasing the flow of oil passing through the mixture. The heavy tar oil heated at a temperature of 130° C., by a steam worm passing through it, is allowed to pass from top to bottom over the mixture to be treated; the dissolving liquid collects in crystallizing vats, where, by cooling, the sulphur precipitates in crystals; this same oil is then, by a screw system, raised again into the heater, and allowed to pass over and over again by the same series of operations on the mixture, until all the sulphur is exhausted. The old purifying mixture retains a certain amount of the extractive oil, of which it is deprived by forcing through it a current of steam; thus obtaining nearly the whole amount of oil used.

The crude sulphur thus obtained is in octahedric crystals, colored black by a small amount of tarry substances. Purified by distillation, it possesses all the properties of pure sulphur.

In Europe and in this country, an immense amount of sulphur is lost with the mixtures which have been used in purifying gas. Though sulphur is comparatively low in price, experiments made on a large scale have proved that its extraction is profitable to the gas manufacturer, as the extractive matter and the matter from which the sulphur is to be extracted cost him nothing. From experiments I have personally made, I have found better results from an oil not possessing too high a gravity. The oil I have used with the best advantage weighed 0·995 grammes, and boiling at from 180° to 210° C. I have also found that it is necessary to operate at the temperature of 150° C., for fear the sulphur might decompose the oil, and produce sulphuretted hydrogen.—*Journ. of Applied Chem., April*, 1871.

THE CRYSTALLIZATION OF CAMPHOR.

By R. Rother.

The peculiar predilection of camphor for the crystalline form, is one of the petty annoyances inherent to the dispensing department. Insignificant as the objection may seem, it is nevertheless one for which the dispensing pharmaceutist is but too willing to accept a remedy. This difficulty is chiefly experienced with powdered camphor, but the objection, likewise, though in a less obvious degree, applies to the aqueous solution. The most perfect means of pulverizing

camphor, although not the most practicable, is undoubtedly the method by precipitation. The trituration with small quantities of chloroform, ether, benzine, and naphtha, has been proposed; but none of these substances possess any advantages over alcohol, which even still is preferable to all. There is no difficulty whatever in pulverizing camphor; the object is to retain it so.

For this purpose it has been suggested to triturate the camphor with small quantities of magnesium carbonate. If this management insured the pulverulent state indefinitely, the magnesium would often be objectionable. The writer has not tested the process, but was informed by good authority that it is not satisfactory; a similar result is experienced by precipitating the camphor with water from an alcoholic solution, holding the magnesium carbonate in suspension. Other dry substances, as starch, for instance, have been used with equally indifferent success. The writer, feeling the necessity of some alternative, and basing his theory of this crystallization upon the volatility of camphor, applied an etherial solution of resin with a view of coating the particles with a deposit of resin. The experiment, however, yielded a negative result. The writer, assuming then that a non-volatile solvent might retard the crystallization, employed a small proportion of fixed oil—preferably castor oil. This addition is entirely unobjectionable, and although it does not strictly meet the most sanguine expectation of preventing crystallization, it yet modifies this tendency to such a degree that after a long trial the writer is so thoroughly satisfied with its peculiar advantages that the complete success of the experiment would have been scarcely hailed with more delight. The proportion of castor oil employed is about one part in thirty of camphor, or even less. It is added, together with the alcohol, to the camphor, and the whole triturated to the proper degree of fineness. The great advantage rests in the fact that the crystals of camphor subsequently formed are exceedingly minute, and the oil entirely removes the very disagreeable adhesiveness and tenacity of the camphor, which becomes so troublesome during the trituration of pure camphor. Camphor containing the oil can be triturated in large or small quantities, without in the least clogging the mortar or pestle. The powder, after keeping even a long time, mixes perfectly and with facility with all the ordinary ingredients with which it is usually combined in prescriptions. The peculiar gumminess has been perfectly removed by the intervention of the oil.

The aqueous solution of camphor is another point at issue. It has been supposed that during cold weather camphor water drops part of its camphor. However, this phenonenon is only apparent. The writer has often been struck by the extraordinary solvent power of very cold water upon camphor, so that during the coldest winter weather the cold water drawn fresh from the hydrant, and having a very low temperature, always yielded the strongest camphor water, which, when subjected to the warm temperature of the room, deposited camphor abundantly and in weighable quantities, not upon the glass above the liquid, but floating in beautiful crystals in the liquid itself; so much so that the water was often filtered again before use.

To verify the above conclusion, the writer employed lukewarm water. The camphor was first finely triturated with the aid of alcohol, then with the magnesium carbonate, first rubbed through a coarse sieve, then with a portion of the water, and poured into a capacious bottle; the remainder of the water was then gradually added, and the mixture violently shaken during the intervals, and finally filtered. (This is essentially the writer's manipulation for the aromatic waters.) The bottle containing the filtrate was securely corked and allowed to cool. After six hours a very thin film of crystalline camphor had deposited on the walls of the bottle above the liquid, the latter containing no visible trace, not even floating upon the surface. The liquid was again filtered and exposed to intense cold for a long time, but no more camphor separated, although the liquid possessed the taste of camphor in a marked degree. Therefore, to make camphor water, free from separated camphor, use lukewarm water, or use water of the ordinary temperature, let it become equalized to the temperature of the room, and after a repose of twenty-four hours, filter. But to make a supersaturated camphor water, employ water having a very low temperature.—*The Pharmacist, April*, 1871.

ANALYSES OF SECRET REMEDIES, ETC.

By Dr. Ehrhardt.

Received for analysis from Dr. R——l, Boston, a bottle of "*Ludwig's*" *Anti-Cholera Acid*, advertised in the Western States, and sold at $ 5.00 per four ounce bottle.

Result: 1 part concentrated sulphuric acid.
5 parts wine.
10 parts water.

From the same. "*Hatte's Remedy for Diseases of the Eye.*" Under this name is sold: 1. A Balsam. 2. An Eyewater.

The Balsam is put up in small tin boxes, on the cover of which are engraved the letters P. H. On the paper cover is a seal, with an eye; over it the words "Eye Balsam;" and underneath, the letters J. P. H. The following is the exact composition of this highly prized balsam.

1 drachm of butter.
2 grs. extract red sandal wood.

The Eyewater.—This is contained in a small bottle, with the seal the same as on the tin.

Digest the flowers of rosemary in spirit of rosemary, and this wonderful eyewater is ready.

Dr. Halliday, of St. Louis, sends a sample of *Kalydon's and Gowland's Cosmetic Wash.*

A lady having used about one bottle, had a very disagreeable and obstinate eruption on her face, which lasted several weeks.

1 ounce bitter almonds (the skin being removed).
8 grains bichloride of mercury.
1 pound rosewater.

All these rubbed together in a mortar, pressed and filtered, make the wash.

In the directions for use, it is stated that a few drops should be mixed with the water in a wash basin. Such a small quantity certainly could not produce such ill effect as above mentioned.

The simplest means of preserving anatomical and pathological preparations is the use of the following solution:

Saturated solution of alum, 100 grammes.
Saltpetre, 2 grammes.

The article to be preserved is immersed in the solution, when it becomes decolorized; but in a few days the color returns, when it is taken out of the solution, and kept in a saturated solution of alum and water only.

Test for Blood-stains.

The following test will show the smallest quantities of blood, even after a long time, and where attempts have been made to remove

them, notwithsanding the destruction of the blood globules. If the smallest quantity of coloring matter remains the test is sure. The crystals which are obtained in this test are so characteristic, and form under such peculiar circumstances, that it is impossible to be deceived. The following is the *modus operandi:*

Some of the fluid obtained by the usual means of washing the spot with distilled water is put in a watch crystal; add a little of the solution of common salt, and let it dry under the bellglass of an air-pump, near a glass containing sulphuric acid. Now wash the deposit on the crystal with acid acetic. glac; evaporate to dryness at a temperature of 100° C. on the water-bath; then add a few drops of water, and watch the crystallization under the microscope. Any one who has once seen and watched the crystallization can never be mistaken.—*Medical Gazette, May 6th*, 1871.

ON THE FLOWERS OF *ARALIA SPINOSA* L., AND *HEDERA HELIX* L.

By Thomas Meehan.

The study of *Aralia spinosa, L.*, affords some interesting facts which do not seem to have attracted the attention of other observers.

In Dr. Gray's indispensable *Manual of Botany*, it is said to be "more or less polygamous." I have had many specimens under my daily observation this season, from the earliest opening till the last blossom appeared, and find that it is much more nearly monœcious than the above quotation would imply.

There are three different sets of flowers corresponding to the thrice compound branchlets of the large panicle. When the flower scape elongates, it seems suddenly arrested at a given point, and a very strong umbel of *female* flowers appears at the apex. A great number of secondary branches appear along this main one; and they also suddenly terminate each with an umbel of female flowers. From these secondary branches a third series appear, and these flowers are well filled with anthers that are abundantly polleniferous. The female organs of these flowers of the third class, are, however, defective, as only a few bear capsules, and in these a large portion of the seeds have no ovules. The polygamous character is confined to this third series of flower, the first two having purely pistillate blossoms. In these there do not seem to be the rudiments of stamens.

The most remarkable part of this process of development is, that the whole of this first series of female flowers should open so long before the male ones come, that they fall unfertilized. Most part of the second series also fall, and the crops of seeds is mainly made up of a few of the last opening ones of the section, and the comparatively few hermaphrodite ones which are found in those of the third class. It is a matter for curious speculation what special benefit it can be to the plant to spend so much force on the production of female flowers too early to mature, and then producing such an immense mass of pollen to go utterly to waste.

It may not be amiss to note, that in the common carrot the earlier strong umbels have often a male flower in the centre; and that while the usual flowers are of a pure white, this one is a crimson color. In the central umbels of *Aralia spinosa*, and at times on spurs along the branchlets of the panicle are similar colored processes, so small that their form cannot be made out by a common pocket lens. Our fellow member, Dr. J. Gibbons Hunt, makes them out, under the dissecting microscope, to be vase-like forms with five minute reflexed segments, and with a small solid disk in the centre. It is interesting as evidently being a successful attempt of an abortive flower to simulate in some respects a real one of another character.

Examining, also, the flowers of the allied European Evergreen Ivy, *Hedera Helix*, L., I find similar laws of distribution of the sexes as in *Aralia spinosa*, with the addition of a somewhat different structure in the male from the female flowers.

In Europe the plant is described as often having a single umbel as a flower spike. It is quite likely in these cases the flowers are hermaphrodite. In all the cases I have met here, the inflorescence is a compound of several umbels,—a terminal one—female, and the lateral ones male, as in *Aralia*. But there are rudiments of stamens in the flower, and in occasional instances I find a filament developed; but never, so far, with any polleniferous anthers. The flowers of the central female umbel have rather longer and stronger pedicles than the lateral male ones. The calyx is united with the ovarium for one-half its length, and the latter much developed in the unopened flower. In the male the segments of the calyx are two-thirds free, and the petals are much longer than in the female flowers.

As in *Aralia spinosa*, the male flowers do not open until some time after the female ones; and not before some of the latter, impatient of delay, have fallen unfertilized.

I have so often and in so many ways demonstrated to the Academy that in plants the male element is a latter and inferior creation, that it seems almost superogatory to point out that these plants illustrate the same principle. But it is a part of the record of what I believe to be unobserved facts in relation to these species, therefore I briefly allude to them.—*Proc. Acad. Nat. Sci., No.* 3, 1870.

Varieties.

The Camphor Tree of Sumatra.—Among the most luxuriant and valuable trees of the island of Sumatra, the first place belongs to the *Dryobalanops camphora*. The tree is straight, extraordinarily tall, and has a gigantic crown, which often overtops the other woody giants by one hundred feet or so. The stem is sometimes twenty feet thick. According to the natives, there are three kinds of camphor tree, which they name "mailenguan," "marbin tungan," and "marbin targan," from the outward color of the bark, which is sometimes yellow, sometimes black, and often red. The bark is round and grooved, and is overgrown with moss. The leaves are of a dark green, oblong oval in shape and pointed. The outward form of the fruit is very like that of the acorn, but it has five round petals. These are placed somewhat apart from each other, and the whole form much resembles a lily. The fruit is also impregnated with camphor, and is eaten by the natives when it is well ripened and fresh.

The amazing height of the tree hinders the regular gathering, but when the tree yields its fruit, which takes place in March, April and May, the population go out to collect it, which they speedily effect, as, if the fruit be allowed to remain four days on the ground, it sends forth a root about the length of a finger, and becomes unfit to be eaten. Among other things, the fruit prepared with sugar furnishes a tasty comfit or article of confectionery. It is said that it is very unhealthy to remain near the camphor tree during the flowering season, because of the extraordinary hot exhalations from it during that period. The greater the age of the tree the more camphor it contains. Usually the order of the rajah is given for a number of men, say thirty, to gather camphor in the bush belonging to territory which he claims.

The men appointed then seek for a place where many trees grow together; there they construct rude huts. The tree is cut down just above the roots, after which it is divided into small pieces, and these are afterward split, upon which the camphor, which is found in hollows and crevices in the body of the tree, and, above all, in the knots and swellings of branches from the trunk, becomes visible in the form of granules or grains. The quantity of camphor yielded by a single tree seldom amounts to more than half a pound, and if we take into account the great and long continued labor requisite in gathering it, we have the natural reply to the question why it fetches so high a price. At the same time that the camphor is gathered—that is, during the cutting down of the tree

—the oil that then drips from the cuttings is caught in considerable quantity. It is seldom brought to market, because, probably, the price, considering the trouble of carriage, is not sufficiently remunerative.

When the oil is offered for sale at Baros, the usual price is one guilder for an ordinary quart wine-bottleful. The production of Baros camphor lessens yearly, and the profitable operations of former times—say in the year 1853, when fully 1,250 pounds were sent from Padang to Batavia—will never return. Since time out of mind the beautiful clumps and clusters of camphor trees have been destroyed in a ruthless manner. Young and old have been felled, and as no planting or means of renewal has taken place, but the growth of the trees has been left to nature, it is not improbable that this noble species will ere long wholly disappear from Sumatra.—*Chem. and Drug., Lond., Jan.* 14, 1871.

Pharmacy in Paris during the Insurrection.—The advantages possessed by iron revolving shutters have generally been admitted, but few, I think, ever found them more useful than did the shopkeepers and pharmacists in the neighborhood of the Place Vendôme on Wednesday last. Since the horrors of the siege, Paris had been gradually sliding into the old grooves; strangers reappeared, letters and telegrams seemed no longer a strange and new pleasure, and commerce had reinstated herself. It was unfortunately but the lull before the storm. Three days before, the Place Vendôme had been occupied by the insurgent battalions of the National Guard, the pretending friends of order, who, at the approach of a peaceful unarmed deputation headed by the journalist Henri de Pène, discharged more than 500 shots into the crowd, killing over twenty and wounding about sixty persons. In an instant the pavement was red with blood, and the dead and dying were carried into the neighboring pharmacies, to receive what attention could be given to them, awaiting the arrival of the surgeons. Ambulance stretchers were soon procured, and mournful processions, headed by men bearing large white flags with the Geneva cross, traversed the streets of Paris, exciting the hate and loathing with which all orderly citizens regard the resumption of a new reign of terror at the hands of the Belleville insurgents. All business, except the mournful duty of stanching death-wounds, is over for the present in this usually gay quarter of Paris. Half a dozen blood-stained mattresses piled in a corner of nearly every pharmacy tell their own sad tale, and the once white marble floors are variegated and slippery as the pavement of the Piazza San Marco, at Venice, on a rainy day. All the shops are closed, and peremptory commands to shut all windows fronting the street are issued in loud tones, accompanied by menaces from loaded chassepots. In comparison with this, the siege was quite enviable; then, at all events, shops were open, and one could walk about the central parts of the city in perfect safety.

And then a certain amount of business was done—business of the pathetic kind. Wives, sisters and sweethearts came and bought pocket pharmacies, little stocks of lint and plaster, perchloride of iron, etc., for their dear friends about to start for the fields of battle. Many a tear was shed over the purchase, many a wish uttered that those dear to them should never require the sad appliances of modern civilization to heal the wounds caused by the destructive

engines of modern barbarity. Alas! how many hopes have been scattered to the wind! How many pale, weeping figures, clothed in black, are daily to be seen carrying in pious hands wreaths of "immortelles," to deck the rude crosses that lie thick at Montretout and for miles around. The past was dreadful enough, gilded over by a coating of patriotism; the present is doubly fearful—brother against brother, and no canopy of glory, but one reeking shroud of vengeance, hatred and bloodshed.

The siege, by provoking the appetite, instigated curious researches among the edibles generally found in pharmacies. As long as a few tins of concentrated milk remained, we fared luxuriously on arrowroot puddings and oatmeal gruel; in fact, a tolerable pharmaceutical dinner, save the monotony, was daily procurable, and consisted of a soup of Liebig's extract thickened with tapioca or pearl-barley. A *hors d'œuvre* of anchovy paste or olives; then a *pièce de résistance*, such as curried horseflesh, or a cat's thigh strong with garlic, a salad of mustard and young flax, which we grew in boxes in the cellars, a dessert of Jordan almonds and conserve of hips, and a strong cup of coffee with which to wash all down. When the bread became almost uneatable, Hard's food was brought into requisition—the dough was cleanly made in a large pestle and mortar, with a due proportion of bicarbonate of soda and hydrochloric acid, and baked into light little loaves, or rather cakes, of surpassing delicacy of flavor. Our distaste for horseflesh induced us to invent sundry *bouquets*, the success of which was so great in imparting a really pleasant flavor to the insipid meat, that I am sure no *cordon bleu* should ignore their utility. The favorite consisted of a clove of garlic and a pinch of peppercorns, corianders, cloves, parsley-seed, dried thyme and ginger, bruised together and tied in a piece of muslin.

The only article for which an extraordinary demand existed was extract of meat. Tonics were much taken, and resulted in several new specialities, rather more ingenious than tasty, such as a combined essence of calisaya and Liebig prepared with Cognac!

ERNEST J. T. AGNEW.

232 *Rue de Rivoli, March 22nd*, 1871.

—*Pharm. Journ., Lond., April* 1, 1871.

Will Snake-Poison Kill a Snake?—Dr. Fayrer, in India, has been experimenting to correct the popular error that a snake cannot kill a snake. He took a young and very lively cobra, fourteen inches long, and which was bitten in the muscular part of the body by a krait forty-eight inches long. The krait had not bitten for some days before. From a detailed report by Dr. Fayrer, it appears that the cobra was bitten at 12.50 P.M. At 1 P.M. it was very sluggish, at 1.3 P.M. so sluggish that it moved with difficulty, could be easily handled, and made no effort at resistance. At 1.20 it was apparently dying, and its movements were scarcely perceptible, and at 1.22 it died, thirty-two minutes after the attack. Dr. Fayrer has found that the water-snakes of India are deadly poisonous. In the Bay of Bengal they swarm, and it is noted as ominous that lately it was proposed to erect a sea-bathing establishment for Calcutta at Barwar, under the assurance that there were no sharks. It is remarked

that sharks need not be noticed when a bather may have deadly water-snakes swimming after him.—*Pharm. Journ., Lond., April* 1, 1871, from *Nature.*

Test for Silver-Plating.—In the January number of *Polytechnisches Journal von Dingler* is a simple process by Professor Bœttger for testing the genuineness of silver-plating on metals, which may be of value to many. The metallic surface is carefully cleaned, and a drop of a cold saturated solution of bichromate of potash in nitric acid is placed upon it, and immediately washed off with cold water. If the surface is silver, a blood-red spot of chromate of silver is formed, whereas on German silver or Britannia metal the stain is brown or black.—*Pharm. Journ., Lond., April* 1, 1871, from *Athenæum.*

Vulcanized Rubber Sponge.—A more or less cellular mass has been, for some time past, produced from rubber, which presents the combined compactness and elasticity required of a bath-sponge in such a degree that it will very likely find an extensive application for many purposes for which the natural sponge alone has hitherto been used. All that can be learned about the process, which as yet has been kept a secret, is, that the rubber is repeatedly vulcanized, taken up by a solvent, and poured into moulds. The color of this sponge is generally dark gray, but brown ones are also found. Large quantities are sold to livery-stables, where they are used to clean horses, in place of the ordinary combs. The handle consists of hard rubber. It is stated that they take the dust more completely away, that no hairs are detached by them, and that they give to the hair a finer lustre. Sponges are also fabricated for cleaning cloth, hats, ribbons, gloves, mirrors, windows, etc. These sponges are preferable to the ordinary ones, being free from sand, and capable, by reason of their greater elasticity, of adapting themselves to every surface.—*Technologist, May,* 1871.

New Bleaching Liquid.—A new substance for bleaching wool and silk according to a French patent of Frezon—a solution of common salt and oxalic acid—very efficiently replaces the old process of sulphuring. This mixture answers well for silk in all states, and also for raw, spun, or woven wool. It is composed of 4 lbs. oxalic acid, 4 lbs. common salt, and 200 quarts of water. The goods are placed therein for one hour, and then washed in the river.—*Technologist, May,* 1871, from *Musterzeitung fuer Faerberei,* 1870, *No.* 13.

Sandal-Wood.—This valuable wood was formerly obtained by the East India Company in large quantities from the Fejee Islands. As many as seven large Indiamen have been known to be lying at anchor in one of the bays at once, waiting for cargoes of the precious wood. The trees have been felled with such reckless improvidence, that, on the shores of this same bay, a solitary sapling, planted by a missionary, is now the only living sandal-tree for many miles around.—*Technologist, May,* 1871.

Salt in Kentucky.—The manufacture of salt on quite an extensive scale has been commenced at Brandenburg, Meade County, Ky. Five or six salt-wells near that place have been running for several years, but until recently they

have not been developed. They have fallen into the hands of enterprising men, who are said to be working them with good success. The salt water is boiled by gas obtained from the same wells from which the water flows.—*Technologist, May*, 1871.

Bromide of Iron is recommended by Dr. N. H. Norris, of Beloit, Wis., as almost a specific in involuntary seminal emissions and spermatorrhœa. He has given it three times daily, an hour before or after meals, in doses of 3 to 5 grs., rubbed up in a little syrup; at bedtime a sufficient quantity is given to produce good refreshing sleep, free from lascivious dreams, for which purpose 10 grains are usually sufficient, but as much as 20 grains have been given without injury. —*The North-western Med. and Surg. Journ., April*, 1871, 313—315.

Pharmaceutical Colleges and Associations.

Philadelphia College of Pharmacy.—The last pharmaceutical meeting of the present season was held on the 16th of May. It is hoped that when they are resumed, next fall, they will be even better attended, and be of still greater interest than those of the year 1870–71.

The Board of Trustees have, for the coming winter, again placed Professor J. M. Maisch in charge of the practical and analytical laboratory connected with this College. The laboratory will be kept open for the instruction in practical and analytical chemistry and pharmacy, every day (Sundays excepted), from 9 A. M. till 1 P. M. Instruction will be given in qualitative and (to advanced students) in quantitative, also in proximate analysis, in technical and in pharmaceutical chemistry. Students may elect any one or more or all week days for attendance, either for the entire term (five months) or a fraction thereof. Encouraged by the attendance last winter, and with the view of placing this important feature of pharmaceutical education within the reach of all, the fee has been considerably reduced.

Massachusetts College of Pharmacy.—On the evening of March 18th the third annual commencement was held in Horticultural Hall, in the city of Boston, and the degree of Graduate in Pharmacy was conferred on five young gentlemen by the President, Mr. Samuel M. Colcord. The valedictory address was delivered by Professor George F. H. Markoe.

Newark Pharmaceutical Association.—A formulary of elixirs and unofficinal preparations has been published by this Association, and a circular issued to the medical profession of the city of Newark, wherein they deprecate the prescribing of such fancy preparations of particular manufactures, since many of these elixirs cannot possibly contain what they profess to. The members of the Association propose in all cases to dispense those made according to the formulas agreed upon, unless a special preparation is indicated.

The Maryland College of Pharmacy, we are pleased to learn, is endeavoring to secure a permanent "home," by purchasing or erecting a suitable building.

College of Pharmacy of the City of New York.—The graduates of this Institution held a meeting on the 24th of May, and formed an alumni association.

The following officers were elected:

President, Daniel C. Robbins, N. Y. *Vice Presidents*, Edward Henes, N. Y.; John W. Ballard, Davenport, Iowa; Henry C. Muse, Elmira, N. Y. *Treasurer*, Th. Frohwein, N. Y. *Secretary*, T. F. Main, N. Y. *Executive Committee*, Chas. B. Smith, Newark, N. J.; Geo W. C. Phillips, Jersey City, N. J.; Gustavus Krehbiel, N. Y.; Geo. G. Sands, N. Y.; P. W. Bedford, N. Y.; Wm Muir, Brooklyn, N.Y. *Committee on By Laws*, Messrs. Bedford, Wright and Close.

The meeting then adjourned until Wednesday, June 7th.

The Columbia Pharmaceutical Association was organized at Washington, D. C., in April last, by 26 pharmacists. If we are to judge by some of the members, whom we happen to know, we may expect this new organization to become a stimulus to our brethren on the Potomac of entering more frequently into scientific intercourse with the other parts of our country. The officers are: Wm. S. Thompson, President; J. D. O'Donnell, F. S. Gaither, Vice-Presidents; J. C. Fill, Recording Secretary; Oscar Oldberg, Corresponding Secretary; Z. W. Cromwell, Treasurer; D. P. Hickling, Librarian; F. D. Dowling, Curator.

The Chicago College of Pharmacy.—In the session lately closed in this institution the usual commencement exercises were omitted in view of the fact that it was the first course of instruction given before the College during several years, and, as a consequence, the attendants were almost exclusively first course students, and not eligible to graduation. The only exception to this rule was in the case of Mr. F. M. Goodman, of this city, upon whom the degree was conferred.

The Trustees of the College are highly gratified with the success which has so far followed the re-establishment of the School of Pharmacy, and look forward to its future prosperity as a certainty. With the coming season a more extended and more thoroughly systematized course of instruction will be inaugurated—full particulars of which we hope to be able to present to our readers in our next issue.—*The Pharmacist, April*, 1871.

Kansas College of Pharmacy.—One or two meetings of this institution could not be held for the want of a quorum; but we learn that measures are in progress to have it well represented at the next national meeting.

The California Pharmaceutical Society.—The twenty-first meeting of the California Pharmaceutical Society was held on the evening of April 19th, Mr. Calvert (the President) in the chair. Owing to the resignation of Mr. Perkins, who has removed to a distant State, Mr. G. G. Burnett was appointed Recording Secretary, *pro tem.*

Mr. Steele, the Corresponding Secretary, presented to the meeting a large and interesting correspondence. Among other letters, those from Professor

Maisch, of Philadelphia, and Mr. Tufts, the Treasurer of the American Pharmaceutical Association, were read.

The report of the Executive Committee was read and approved. Mr. Steele next read the Constitution and By-Laws of the Society, amended with a view to incorporation. These were approved, article by article, and the Executive Committee empowered to take immediate steps for the incorporation of the Society.

The following is the report of the Executive Committee:

The Executive Committee of the California Pharmaceutical Society herewith present the Constitution and By-Laws of the Society amended with a view to the speedy incorporation of the Society, according to the laws of the State of California.

The pharmaceutists throughout the country are gradually awakening to the importance of a thorough practical and scientific pharmaceutical education, in order to place the practice of pharmacy where it properly belongs—among the learned professions, a rank already accorded to it in most parts of Europe—and as to further develope this sentiment among our fellow pharmaceutists was the prime motive in organizing the California Pharmaceutical Society, we regard it the duty and interest of all pharmaceutists to identify themselves with us.

That in order to elevate the standard of pharmaceutical education in our midst an institution aiming at the objects expressed in our Constitution is absolutely necessary, we think all must concede.

The practice of pharmacy has been placed under legislative restriction in most parts of Europe, and as is well known sumptuary and restraining laws have been passed recently by the Legislatures of various States of the Union; and a regard for our own reputation would seem to require us to prepare and offer a bill providing for the examination and registration of apothecaries to the Legislature at its next session.

Knowing it to be the will of our organization that we enroll ourselves among the incorporate bodies of the land, that thereby we may strengthen and increase our influence, and provide for our future prosperity; and believing that our action herein is but the prelude to the early establishment of a College of Pharmacy, we offer this report with a sincerely expressed hope that the wishes of our hearts in the matter of the elevation of the character of the pharmaceutical profession in our State may be gradually and effectually accomplished.

(Signed) William Simpson,
William Geary,
W. T. Wenzell,
Wm. E. Mayhew,
James G. Steele,
Committee.

Pharmaceutical Association in Mississippi.—At the fourth annual meeting of the State Medical Association of Mississippi, held at Meridian in the beginning of last April, the following resolution, offered by Dr. Barnett, was adopted:

Resolved, That the druggists, pharmaceutists and chemists of the State of Mississippi be requested to call a convention at an early day, and organize a State Pharmaceutical Association, to meet annually at the same time and place that the Medical Association does, and co-operate with it in any and all measures of mutual interest and importance.

Knowing that at least one attempt, which was then unsuccessful, has been made, of establishing a State pharmaceutical association, it is to be hoped that the pharmacists of Mississippi may renew their efforts, so that they may be represented as a body at the meeting of the American Pharmaceutical Association to be held in St. Louis in September next.

Minutes of the Pharmaceutical Meetings.

At the meeting held May 16th, 1871, Dr. Wilson H. Pile presiding, the minutes of the last meeting were read and approved.

A paper was read by Prof. Maisch, on the Seeds of a Species of Strychnos, brought to New York by a vessel from the East Indies, and exhibited at the meeting in February. On motion, it was referred to the Publication Committee. He finds them destitute of the alkaloids. (See page 241.)

Dr. Pile exhibited four specimens of syrup of iodide of iron, made with glucose, instead of syrup, which is directed in the U. S. Pharm. His object had been to ascertain whether the effect of such substitution would be to promote the preservation of the iodide without change. Three of the specimens had undergone more change of color than would have been expected in the officinal syrup, and the other was nearly in the condition that would have been anticipated if prepared by the Pharmacopœia process.

S. Mason McCollin stated that he used glucose as an addition to a variety of syrups, or rather to simple syrup to be used as a basis to medicated or flavored syrups, with a view to giving it more body, without increasing the tendency to precipitate.

Dr. Pile called attention to the tendency to precipitate, which constitutes one of the difficulties in manipulating with the syrups of the phosphates, and inquired whether it might not be accounted for by impurities in the sugar. Some manufacturers of these preparations had assured him that they gave the preference to "Lovering's Sugar," and found no difficulty with it. T. S. Wiegand, Prof. Parrish and others dissented from this view, stating that there was, according to their experience, very little difference between the products of the several sugar refineries that supply our market.

Prof. Maisch having observed a crystalline precipitation in mixing solution of morphia with cyanide of potassium, exhibited the results of some of his experiments, and reported that hydrocyanate of morphia is nearly insoluble in water and in an excess of the precipitant, but dissolves readily in diluted mineral acids. The experiments were made with granular cyanide of potassium and with cyanide of ammonium, prepared from hydrocyanic acid and ammonia.

Then adjourned.

Clemmons Parrish, *Secretary.*

Editorial Department.

Purchase of Honorary (?) Degrees.—The Boston *Medical and Surgical Journal*, of May 18th, publishes, under the above caption, a correspondence between two gentlemen in Boston and a person by the name of A. J. Hale, M. D., who, during the latter half of last year, has been perambulating the streets of Philadelphia, and our neighboring city of Camden, and in January last had made the city of Newark, N. J., his home. The correspondence is decidedly rich, and proves that this Dr. A. J. Hale is a very enterprising genius, so that we consider it our editorial duty to give publicity to his beneficent labors, without charging him for the advertisement or the editorial "puff." Our readers will perhaps remember that in 1867 (see Am. Journ. Ph. 1867, p. 473) we ventilated a little the Collegiate Agency of one G. W. Marriott, D.D., M.A., M.D. This Doctor Hale has followed in the footsteps of his illustrious predecessor; in fact, he appears to rather outshine this lesser light. He is obliging enough to promise satiating the hungry ones with "the honors of all the universities in the United States, such as the degree of A.M., A.B., M.D., S.D.D., D.D., LL.D., &c." It is true that, as it appears from the correspondence, the degree of M.D. is procurable only from the *American University* here; but "this is a regular made out Latin degree the same as issued to regular graduates; name in full and date wished will be required." This Latin degree is all right; for, "yes, sir, the university with which I am connected is a reality; a regularly chartered medical institution, now in successful operation, all right and legal."

All this is very fine and exceedingly satisfactory, and it must be confessed that the terms are not unjustly exacting; the applicant may be "accommodated for the lowest price ($50), sent by express, C. O. D." Moreover, a commission of twenty per cent. ($10) will be allowed on each order from your friends, so that little exertion will be required to obtain such a legal all-right Latin degree for nothing, and make something handsome besides.

This same Doctor A. J. Hale likewise "removes cancers and other tumors without the use of knife or caustic," and "imparts information for a reasonable sum."

In view of the benefit conferred upon mankind by such a Collegiate Agency for such a University, it cannot be otherwise but reflecting infinite credit upon the city and State blessed with such institutions, and upon the Legislature which has chartered it and permits it to extend its blessings over other portions of our great country. Poor ignorant Europe should, without further delay, be supplied with agencies. Agencies would prosper in the icy fields of Alaska, and in the sunny clime of the Hottentots. It is with the desire of extending this "business" that we give the above information, and disclaim all expectations of gratitude from any of the parties interested.

Acknowledgement.—We omitted to state in our last issue that the Committee appointed by the American Pharmaceutical Association to prepare an address to the North German Apothecaries' Society, have received an answer

thereto, signed in the name of the directory, by Mr. W. Danckwortt, the presiding officer, under date of Magdeburg, Feb. 14th, 1871.

The New York Board for Examining Apothecaries.—Last winter the New York newspapers raised an outcry against the *murderous drug clerks*. The excitement thus created served as an excuse for increasing the political patronage of the Mayor. During the last session of the New York Legislature, not less than three different bills were before that body, out of which number not the best one has been adopted, that which was favored by the New York College of Pharmacy having been ignored. The provisions of the law now in force are as follows:

Sect 1. Authorizes the Mayor to appoint a board to consist of one skilled pharmaceutist, one practical druggist, and two regular physicians, who are to examine all druggists and clerks; it also forbids the putting up or attempt to make up physicians' prescriptions without previously having received the certificate of the board; fine not more than $500, or imprisonment not over six months, or both.

Sect. 2. Vacancies are to be filled by the appointment of some other physician, chemist or druggist.

Sect. 3. Organization of the board must take place within ten days after appointment. A practical druggist is to be appointed as secretary of the board.

Sect. 4. Duty of the board: Examination of all persons employed or hereafter to be employed in putting up prescriptions or dispensing medicines in the city of New York; if found competent, they receive a certificate, which shall be deemed as a license to engage in such employment.

Sect. 5. The board, with the approval of the Mayor, fix the sum to be paid for the certificate; the money thus received shall be used for the payment of the salaries and other expenses, and any surplus paid into the city treasury; a return of receipts and disbursements is to be made to the city Comptroller once in 3 months.

Sect. 6. The board of Supervisors shall fix the compensation—not to exceed $2500 per annum—of each member of the board, and of the secretary, and shall raise, by tax on real and personal property in the city of New York, such sum as may be necessary to pay any balance for expenses and salaries not covered by the examination fee.

It will be observed that the appointment and removal rests with the Mayor, and since this officer in all our large cities is nearly always elected for political reasons, it will not be long before this examining board will consist of politicians, rather than of men who have the welfare of pharmacy at heart. Since a distinction is made in Sect. 1 between pharmaceutists and druggists, the framers of the bill evidently intended that the former should be and remain in the minority in a board that has to pass judgment on the capability of pharmaceutists, while one-half of the board consists of physicians, who, as such, have no idea of the requisites of a reliable prescriptionist. The careful wording of Sect. 2 seems even to indicate, as if the small voice allowed to the pharmacists in this board may be abrogated altogether; for vacancies, from whatever cause, shall be filled by some other physician, chemist or druggist: the word pharmaceutist does not occur here.

It is also noteworthy that no provision is made for apprentices to learn, under the guidance and supervision of others, how to put up prescriptions.

The high salaries form another objectionable feature of this law. While it will not be contended that, after the licensing of the pharmacists at present engaged in New York city has been accomplished, there will be the shadow of a necessity of the board to be in session daily during the usual office hours, it follows that subsequently, the licensing of every so-called drug clerk for New York city will cost her a round sum of $150, if the applications amount to one hundred annually. Five salaried officers, at $2500 each, cost annually $12,500; add thereto, for rent for office, cost of furniture, stationery, and other expenses, $2500 per annum, and the sum of $15,000 will be reached, for which New York will have done nothing, except supplying fine positions to five men, and this circumstance alone will cause these offices to be eagerly sought for. If the city would expend one third of that sum annually to the New York College of Pharmacy, the money would go far towards increasing the facilities for pharmaceutical education, and the examination and licensing of applicants, if entrusted to the College, in lieu of such a grant, would be performed better and more satisfactorily.

The law, in our opinion, has no redeeming feature whatever, aside even from its ignoring the existence of pharmaceutical educational institutions in this and other countries; and we fear that the public will find it no greater security against the *murderous drug clerks*, while it certainly has the advantage of increasing the taxation for the benevolent purpose of creating some fat offices.

Cabinet Specimens.—Attention is called to the following notice of the Curator of the Philadelphia College of Pharmacy. In various parts of the country, certain indigenous drugs are employed, either by physicians in domestic practice, which are never or very rarely met with in commerce, or usually appear in commerce in a ground condition. Some commercial indigenous drugs, as, for instance, cypripedium, are evidently obtained from at least two different species of plants. We mention these instances to show that it is in the power of most of the numerous friends and graduates of the College to contribute their mite towards the completion of the College cabinet:

The Philadelphia College of Pharmacy, having (since the removal to the new building) enlarged facilities for the exhibition of chemical and pharmaceutical specimens and products, solicit donations to the Cabinet. It is believed that many rare specimens, now in the possession of single individuals, thus having but a limited sphere of usefulness, might be profitably placed in the College, and be the means of gratifying and instructing many. Contributions may be forwarded to the College, 145 N. 10th street, care of

Joseph P. Remington, *Curator.*

Apothecaries are Liquor Dealers.—According to a decision recently rendered by General A. Pleasonton, the Internal Revenue Commissioner, the Act of Congress of July 14th, 1870, has also abolished the exemption heretofore provided for apothecaries, by the Act of July 13th, 1866, which exemption has not been affected by the various amendatory laws passed afterwards. Section 79, § 33, was as follows:

"Apothecaries shall pay ten dollars * * * * Nor shall apothecaries, who have paid the special tax, be required to pay the tax as retail dealers in liquors in consequence of selling alcohol or of selling of, or of dispensing upon physi-

cians' prescriptions the wines and spirits officinal in the United States and other National Pharmacopœias, in quantities not exceeding half a pint of either at any one time, nor exceeding in aggregate cost value the sum of three hundred dollars per annum."

As we understand the decision of General Pleasanton, the repeal of the special tax heretofore paid by apothecaries, carries with it the above exemption granted on the payment of this special tax under the former Internal Revenue laws. Apothecaries are therefore, after the 30th of April last, subject to the same liability as any other person for the sale of distilled spirits, wines or malt liquors in any quantity, and without reference to the purposes for or manner in which they are sold, that is to say, alcohol in any form and for whatever purpose, and for the dispensing of such spirits and liquors upon physicians prescriptions, and for strictly medicinal purposes. Hence apothecaries must take out licenses as retail dealers in liquor.

The decision of the Commissioner is probably valid in law, but we doubt the intention of Congress of imposing this tax upon apothecaries and thus stamping them as liquor dealers. From the very inception of the Internal Revenue laws, Congress has always shown a disposition to keep legitimate pharmacy entirely distinct from the traffic in liquors; expressions which in former laws were not explicit enough or liable to misinterpretation, were changed so that every facility was given to pharmacists to carry on their business that was consistent with the object of the law, and the restrictions were only such as were necessary to prevent evasions of that part of it which imposed heavier taxation upon the commodity of spirits used as beverage. It is, for this reason, but fair to suppose that, in repealing the so-called special tax, the removal of the exemption clause was not contemplated. We regret that the law of 1870 is not more explicit on this point; while believing that apothecaries, like all other good citizens, are willing to have their fair share of taxation, we cannot but deplore the necessity that compels us to be *liquor dealers* in the eyes of the law, before we can be pharmacists.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Chemistry: General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. A manual on the general principles of the science and their applications to medicine and pharmacy. By John Attfield, Ph.D., F.C.S., &c. From the second and enlarged English edition. Revised by the author. Philadelphia: Henry C. Lea. 1871. 8vo, 552 pages. Price, $2.75; bound in leather, $3.25.

A more careful examination of this work has fully confirmed the opinion which we expressed in our last number (p. 240). It is a valuable guide to the medical and pharmaceutical student who, by practical experiments, desires to gain a thorough knowledge of chemistry.

The author, after a short introduction, makes the student acquainted with the general properties of the non-metallic elements, explains then the derivation of names and the symbols of the elements, and gives a succinct account of the principles of chemical philosophy, explaining, as they occur, the etymology of scientific terms. The student is now made acquainted with the metallic

elements, their official preparations and tests, and, in a similar manner, with the acids. A concise description of systematic (qualitative) analysis is followed by organic chemistry (exclusive of the acids), toxicological analysis, examination of morbid urine and calculi, quantitative (volumetric and gravimetric) analysis and dialysis. An appendix, containing several valuable tables, and a full index complete the volume.

If we consider the large scope and the small size of the work, it is astonishing what an immense number of facts the author succeeded in embracing in this space. This was possible only through conciseness and terseness of language, and by a systematic arrangement avoiding repetitions as much as possible, which has occasionally been accomplished only at the cost of convenience; thus, the well-known reaction of morphia with nitric acid is not found among the analytical reactions of this alkaloid (p. 318), nor does the index indicate where to look for it. It is, however, described under brucia (p 324), to distinguish the reaction of the former from the similar one of the latter alkaloid.

Under the synthetical reactions the official (the author's term, and defended by him some time ago in the Pharm. Journ. and Trans.) processes of the British and U. S. Pharmacopœias are mentioned and explained. In some instances, the latter has not received the full attention it deserved, for the pharmaceutical student at least. The employment of bicarbonate of potassa, for instance, in the preparation of various chemicals was directed on account of the greater purity of this salt as compared with the carbonate, and for the purpose of avoiding the previous preparation of potassæ carbonas pura. The process of the same pharmacopœia for the two bismuth salts is based on the sparing solubility of arseniate of bismuth in *dilute* acids, which still hold the nitrate in solution, the precipitate which occurs on long standing containing most of the arsenic, which element is removed only with difficulty from metallic bismuth by fusion with oxidizing agents, but completely, as the author correctly states, by evaporating the solution in nitric acid to crystallization.

In most instances the characteristic tests are mainly given, though those of secondary importance are generally alluded to.

The least satisfactory portion, in our opinion, is that treating of organic chemistry, in which part we miss some important facts, and find others strangely misstated. We miss (page 321) the beautiful test of Herapath for the cinchona alkaloids, find no discriminating test between quinia and quinidia, except the relative solubility in ether, and still observe in the chlorine and ammonia test the statement that fresh chlorine water is required, while the beautiful emerald green color is produced in a liquid strongly acidulated with muriatic acid, provided only that the quinia solution be dilute, or, in other words, that quinia, chlorine and ammonia be present in a certain relative proportion, the precise limits of which, we believe, have never been determined.

We have never manipulated with lobelina (p. 328), but, as we understand Prof. Procter's experiments, this alkaloid is *not* volatile; on the contrary, it decomposes on the application of heat, unless combined with an acid.

A truly unaccountable statement of the author appears on p. 329, under the head of veratria. It is alleged here that "this alkaloid occurs as gallate of veratria in various species of Veratrum (as *Ver. album*, *Ver. viride*) in Ceva-

dilla and in the cormus or so-called root of *Colchicum autumnale.* White hellebore is also said to contain three other alkaloids—sabadillia, colchicia and jervia." This has to be corrected to read that cevadilla contains veratria and sabadillia; *Ver. album*, jervia and another alkaloid (which is most likely *not* veratria); *Ver. viride*, *no* veratria, but two other alkaloids (C. Bullock). Colchicum contains colchicia, which in 1820 Pelletier and Caventou declared to be identical with veratria, but which the researches of Geiger and Hesse, Carter, Hübschmann, Bley, Oberlin, Hübler, Diehl and others proved to be distinct.

On page 341 we miss the fact that the bark of *Cerasus serotina* yields hydrocyanic acid; on pages 344 and 346 the conversion of the resins of the Convolvulaceæ by fixed alkalies into acids, soluble in water, is omitted, and the statement is repeated, which has never been proven, that the etherial resin of the true jalap is identical with the resin of *Ipomœa orizabensis.*

Notwithstanding these defects and some others of minor importance, we heartily recommend this work to the pharmacist and physician. The latter will be particularly pleased with the urinary analysis, which is illustrated with a number of good wood cuts of microscopical tests; and both professions will derive much information from the several tables contained in the work, particularly the analytical tables, and the tables of solubilities and of impurities, although our Pharmacopœia gives some special tests which are not alluded to in this table.

Half-yearly Compendium of Medical Science. A Synopsis of the American and Foreign Literature of Medicine Surgery and the Collateral Sciences, for six months, edited by S. W. Butler, M. D., D. G. Brinton, M. D., and by H. Napheys, M. D., Part VII, January, 1871. Philadelphia, S. W. Butler, M.D. Price, single numbers, $2; per annum, in advance, $3.

The delay in the publication of this number was caused by the loss of a large and important portion of copy by the printer, which for a long time was concealed from the publisher, and when concealment became impossible, it required considerable time to supply the loss.

The number before us is a volume of 338 pages, containing nearly 300 articles collated from 117 American and 173 foreign writers, and culled from 73 different publications. The material from French sources is less than usual, in consequence of the war prevailing in that country during the latter half of last year. The selections appear to have been made with considerable care and are judiciously arranged. The references to the journals containing the original articles are in most cases sufficient; but occasionally the date of the journal is omitted; and where the original appeared in a publication in a foreign language, reference might have been made to the English or American journal in which the article has found its way, so as to facilitate future researches.

In glancing over the pages of this compendium, we observe many typographical errors,—as for instance, podophylli resinia on page 54, in most cases easily corrected; on page 54 the word aconit*ine* is used twice in the place of aconit*e* or aconit*um*; lococtonum should be lycoctonum. But the greatest oversights occur in the titles of foreign journals, and particularly of the German language, which, as a rule, are spelled incorrectly, while comparatively few misspellings have been made with the French journals.

The work is well gotten up in all other respects, and will doubtless prove useful to the physician as a book of reference on the latest observations and improvements in all departments of medical science.

Second and Third Annual Report of the Trustees of the Peabody Academy of Science, for the years 1869 *and* 1870. Salem, 1871.

A pamphlet of 110 pages containing the Proceedings of the Trustees, also the exercises held and addresses made at the dedication of the museum of this institution, which was founded by the munificence of the late Mr. Peabody. Five papers on scientific subjects are appended, being mostly lists of zoological specimens added to the museum, or collected by different naturalists in southern countries.

OBITUARY.

Paris papers announce the death of Antoine Cesar Becquerel, the celebrated electrician. He died in Normandy, while the siege of Paris was progressing, and very likely the sad event was hastened by the fatigue of his hasty flight from the capital. As nearly all the members of the French Academy of Sciences remained at their posts to assist the Committee of Defense, the departure of the Becquerels, father and son, was much criticised; but the advanced age of the senior afforded a good excuse for the step he decided to take.

Becquerel was born March 8, 1788, and at the time of his death was, therefore, in his 84th year. He was three years older than Faraday, and during his long life had been a contributor to the same department of knowledge as the great English philosopher, whose death we had occasion to announce in 1867. Between the years 1834 and 1840 he published his great treatise on electricity and magnetism, in seven large octavo volumes. This was followed by "Physics in its Relations to Chemistry," in two volumes; and the number of his contributions to the proceedings of the Academy, and to the journals of science, has been very great. He was one of the most prolific of French writers, and retained a remarkable vigor of intellect to the last. His son, Alexander Edmond Becquerel, born in Paris in 1820, is a worthy representative of the father, and is the author of many investigations on electricity and magnetism. The similarity of the name has lead to much confusion, and much of the younger Becquerel's work has been credited to the father. Another son, Alfred, is an eminent physician, and the author of valuable papers in his department of science. —*Scientific American.*

Professor Dr. Mitscherlich, the well known Berlin pharmacologist, and brother of the celebrated chemist who died some years ago, died in that city March 18th last, after an illness of several weeks.

John D. Owen departed this life May 3d in Louisville, Ky., after an illness of twenty days with typhoid fever. The deceased learned the drug and apothecary business with Messrs. R. A. Robinson and Co., of Louisville, afterwards served with Edw. Wilder and Co., and finally connected himself with the firm of Owen and Sutton. Having attended two courses of lectures at the Philadelphia College of Pharmacy and having devoted considerable time to the study of Chemistry under the guidance of Prof. Genth, he graduated with high honors last Spring. He was a promising young man of good sound judgment, was well liked by his fellow students and became endeared to his teachers through his diligence and devotion to pharmaceutical studies.